

Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for altering a T cell mediated pathology in a patient, said method comprising:

administering a composition comprising a first and a second chimeric protein;
said first chimeric protein comprising at least a portion of a V_β or V_α region of a TCR,
~~and~~ at least a portion of ~~an~~ a heavy chain immunoglobulin constant region;
and a linker region between said V_β or V_α region and said portion of a heavy chain
immunoglobulin constant region; wherein said linker region is either (a) a portion of the
 C_β or C_α region of a TCR wherein said C_β or C_α region is thirty amino acids or less , or
(b) a synthetic linker region; and
said second chimeric protein comprising at least a portion of the other of said V_β or V_α
region of a TCR wherein said V_α region or said V_β region in said second chimeric protein
is not present in said first chimeric protein,
at least a portion of a light chain an immunoglobulin constant region; and
a linker region between said V_β or V_α region and said portion of a light chain
immunoglobulin constant region; wherein said linker region is either (a) a portion of the
 C_β or C_α region wherein said C_β or C_α region is thirty amino acids or less , or (b) a
synthetic linker region;
wherein said V_β ~~and said~~ V_α region ~~are~~ is associated with a particular TCR from a T
cell from said patient having said T cell mediated pathology;
and said administering of said composition alters said T cell mediated pathology in said
patient.

2. (Canceled) The method of claim 1 wherein said composition further comprises a second chimeric protein comprising at least a portion of V_α or V_β region of a TCR, and at least a portion of a second immunoglobulin constant region.

3. (Currently amended) The method of claim 1 wherein said heavy chain immunoglobulin constant region comprises a human IgG $_{\gamma 1}$ constant region.

4. (Canceled) The method of claim 1 wherein said V_α or V_β region of a TCR of said chimeric protein is a V_β .

5. (Canceled) The method of claim 1 wherein said V_α or V_β region of a TCR of said chimeric protein is a V_α .

6. (Canceled) The method of claim 1 wherein said chimeric protein further comprises a linker region between said V_α or V_β region and said portion of an immunoglobulin constant region;

wherein said linker region is a portion of the C_β or C_α region of a TCR, but not the entire C_β or C_α region, or a synthetic linker region.

7. (Canceled) The method of claim 2 wherein said second chimeric protein further comprises a second linker region between said V_α or V_β region and said portion of an immunoglobulin constant region;

wherein said linker region is a portion of the C_β or C_α region of a TCR, but not the entire C_β or C_α region, or a synthetic linker region.

8. (Currently amended) The method of claim 1 ~~or 2~~ wherein said V_α or V_β region of a TCR of said first chimeric protein is a V_β region and said V_α or V_β region of a TCR of said second chimeric protein is a V_α region.

9. (Currently amended) The method of claim 1 ~~[[2]]~~ wherein said light chain ~~second~~ immunoglobulin constant region comprises a portion of a human κ or λ constant region.
10. (Currently amended) The method of claim ~~1 or 2~~ wherein said V_β region of a TCR is an entire V_β region.
11. (Currently amended) The method of claim ~~6 or 2~~ wherein said V_β region comprises an entire V_β region and said portion of a C_β comprises the first nine amino acids from a TCR β chain constant region (C_β).
12. (Currently amended) The method of claim ~~1 or 2~~ wherein said V_α region of a TCR is an entire V_α region.
13. (Currently amended) The method of claim ~~6 or 7~~ wherein said V_α region comprises an entire V_α region and said linker region comprises the first nine amino acids from a TCR α chain constant region (C_α).
14. (Currently amended) The method of claim ~~1 or 2~~ wherein said heavy ~~first or second~~ immunoglobulin constant region is selected from the group consisting of a human IgG $_{\gamma 1}$ constant region, a human IgG $_{\gamma 2}$ constant region, a human IgG $_{\gamma 3}$ constant region, a human IgG $_{\gamma 4}$ constant region, a human IgA $_1$ constant region, a human IgA $_2$ constant region, a human IgM constant region, a human IgD constant region, and a human IgE constant region, ~~a human κ chain constant region, and a human λ chain constant region.~~
15. (Currently amended) The method of claim 1 wherein said chimeric protein is produced by a method comprising:
isolating genes encoding said V_β or V_α regions of a TCR from T cells of said patient having said T cell mediated pathology;

inserting one of said genes encoding either of said V_β or V_α region of the TCR, a linker region, and a the gene encoding said heavy chain immunoglobulin constant region into an expression vector to allow the expression of said first chimeric protein;
inserting said gene encoding the other of V_β or V_α region of the TCR, a linker region, and a gene encoding at least a portion of a light chain immunoglobulin constant region
into said expression vector to allow the expression of said first chimeric protein; and
producing said chimeric proteins by introducing said expression vector into insect cell lines; and isolating said chimeric proteins.

16. (Canceled) The method of claim 15 further comprising the step of inserting a gene encoding either V_β or V_α region of the TCR, a linker region, and a gene encoding at least a portion of a second immunoglobulin constant region into said expression vector to allow the expression of said second chimeric protein.

17. (Canceled) The method of claim 15 wherein said linker region of said first or second chimeric protein is a portion of the C_β or C_α region of a TCR, but not the entire C_β or C_α region, or a synthetic linker region.

18. (Withdrawn) The method of claim 15 or 16 further comprising a step of conjugating said chimeric proteins to a carrier protein.

19. (Withdrawn) The method of claim 18 wherein said carrier protein is keyhole-limpet hemocyanin (KLH).

20. (Original) The method of claim 1 wherein said composition is further co-administered with a cytokine or chemokine.

21. (Original) The method of claim 20 wherein said cytokine is granulocyte-macrophage-colony stimulating factor (GM-CSF).

22. (Withdrawn) The method of claim 20 wherein said chemokine is a monocyte chemotactic protein 3 (MCR 3).
23. (Original) The method of claim 15 wherein said expression vector is a baculovirus expression vector.
24. (Original) The method of claim 23 wherein said baculovirus expression vector comprises a honey bee melittin secretory signal sequence and a human placental alkaline phosphatase secretory signal sequence.
25. (Currently amended) The method of claim 24 wherein said baculovirus expression vector further comprises a baculovirus AcNPV p10 promotor and AcNPV polyhedrin promotor, said p10 promotor controls a honey bee melittin signal sequence, and said polyhedrin promotor controls a human placental alkaline phosphatase signal sequence.
26. (Currently amended) The method of claim 25 wherein said gene ~~genes~~ encoding said V_{β} region of the TCR and said gene ~~genes~~ encoding said first heavy chain immunoglobulin constant region are controlled by said p10 promotor in said baculovirus expression vector, said gene ~~genes~~ encoding said V_{α} region of the TCR and said gene ~~genes~~ encoding said second first light chain immunoglobulin constant region are controlled by a polyhedrin promotor in said baculovirus expression vector.
27. (Currently amended) The method of claim 25 wherein said genes encoding said V_{β} or V_{α} region of the TCR, and said genes encoding said immunoglobulin constant region are controlled by either said p10 promotor or said polyhedrin promotor in said baculovirus expression vector.
28. (Currently amended) The method of claim 15 wherein said genes encoding said first heavy chain immunoglobulin constant region comprises a human $IgG_{\gamma 1}$ gene.

29. (Currently amended) The method of claim 15 ~~16~~ wherein said ~~second~~ light chain immunoglobulin constant region comprises a human κ or λ constant region gene.
30. (Currently amended) The method of claim 15 or 16 wherein said gene encoding said heavy chain immunoglobulin constant region is selected from the group consisting of a human IgG $_{\gamma 1}$ constant region, a human IgG $_{\gamma 2}$ constant region, a human IgG $_{\gamma 3}$ constant region, a human IgG $_{\gamma 4}$ constant region, a human IgA $_1$ constant region, a human IgA $_2$ constant region, a human IgM constant region, a human IgD constant region, and a human IgE constant region, ~~a human κ constant region and a human λ constant region.~~
31. (Original) The method of claim 15 wherein said first chimeric protein is TCR V $_{\beta}$ -C $_{\beta}$ -IgG $_{\gamma 1}$, TCR V $_{\alpha}$ -C $_{\alpha}$ - κ or TCR V $_{\alpha}$ - λ .
32. (Original) The method of claim 16 wherein said first and second chimeric proteins are TCR V $_{\beta}$ -C $_{\beta}$ -IgG $_{\gamma 1}$ and TCR V $_{\alpha}$ -C $_{\alpha}$ - κ or TCR V $_{\beta}$ -C $_{\beta}$ -IgG $_{\gamma 1}$ and TCR V $_{\alpha}$ -C $_{\alpha}$ - λ .
33. (Currently amended) The method of claim 15 ~~13~~ wherein said insect cell lines are Trichoplusia ni (Hi - 5) or Spodoptera frugiperda (sf9) cell lines.
34. (Currently amended) The method of claim 15 ~~or 16~~ wherein said chimeric proteins are analyzed for expression by ELISA.
35. (Currently amended) The method of claim 15 ~~or 16~~ wherein said chimeric proteins are isolated using a protein selected from the group consisting of protein A, protein G, protein L and other proteins being able to bind to an immunoglobulin binding domain.
36. (Original) The method of claim 35 wherein said other protein able to bind an immunoglobulin binding domain is an anti-immunoglobulin antibody.

37. (Original) The method of claim 1 wherein said T cell mediated pathology is T cell lymphoma.

38. (Withdrawn) The method of claim 1 wherein said T cell mediated pathology is an autoimmune disease selected from the group consisting of multiple sclerosis, systemic lupus erythematosus, diabetes, inflammatory bowel disease, myasthenia gravis, rheumatoid arthritis, and thyroiditis.

Claims 39 - 56 (Canceled).